

CONTENT STANDARD 6: Materials and Processes

Students will know the origins, properties and processing techniques associated with the material building blocks of technology.

K-1	2-3	4-5	6	7	8
6.K-1.1 Group resources and materials by properties. 6.K-1.2 Safely use a simple tool to alter a material.	6.2-3.1 Identify the characteristics of different resources and describe how these resources can serve different purposes. 6.2-3.2 Safely select and use a tool or resource. 6.2-3.3 Safely use the appropriate tool for a given need. 6.2-3.4 Use manual and electronic measuring devices accurately.	6.4-5.1 Describe that, by processing resources, the resources can be used differently. 6.4-5.2 Identify technological resources as materials, people, time, money, information, tools, etc. 6.4-5.3 Describe how the processing of resources can produce a more useful product. 6.4-5.4 Identify and describe a group of new and recycled materials used in technological systems. 6.4-5.5 Demonstrate the appropriate selection and safe operation of basic hand and power tools. 6.4-5.6 Explore the basic principles of computer-controlled processing techniques.	6.6.1 Identify and describe a group of new and recycled materials used in technological systems. 6.6.2 Demonstrate appropriate use and safe operation of basic hand and power tools. 6.6.3 Use manual measuring devices accurately. 6.6.4 Explore the principles of manual material processing techniques. 6.6.5 Identify the basic differences between how products are manufactured. 6.6.6 Produce simple products from a variety of materials using manual devices.	6.7.1 Demonstrate the appropriate selection and safe operation of basic hand and power tools. 6.7.2 Use manual and electronic measuring devices accurately. 6.7.3 Describe how products are manufactured. 6.7.4 Move “Produce products...” to the grade 8 column. 6.7.5 Differentiate between primary and secondary raw materials. 6.7.6 Explore methods used to convert raw and recycled materials into usable products. 6.7.7 Demonstrate a working knowledge of the layout, shaping, smoothing, assembly, and finish techniques used to produce a product. 6.7.8 Explore the principles of computer-controlled processing techniques. 6.7.9 Describe how products are made.	6.8.1 Participate in a manufacturing activity. 6.8.2 Participate in determining manufacturing process selection for a particular product part. 6.8.3 Produce products from a variety of materials using manual and computer-controlled devices.

9-10	11-12
6.9-10.1 Participate in recycling activities. 6.9-10.2 Experiment with the alteration of material characteristics. 6.9-10.3 Understand techniques used to extract raw materials from the environment. 6.9-10.4 Classify raw materials according to their physical and mechanical properties. 6.9-10.5 Distinguish between organic and inorganic materials. 6.9-10.6 Describe the physical structures and properties of materials. 6.9-10.7 Differentiate between natural and artificial materials.	6.11-12.1 Research and plan recycling activities. 6.11-12.2 Describe the physical structures and properties of materials used in technological systems. 6.11-12.3 Describe how properties of materials affect technological systems. 6.11-12.4 Identify secondary materials and processes through product analysis.